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Attachment to

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MEMORANDUM FOR: Chief, Technical Services Group,
NPIC

ATTENTION : Chief, Technical Operations Staff,
NPIC/TSG

SUBJECT : TSG/RED Monthly Report for May 1972

Significant Items of Interest for May 1972:

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1. [] Enhancement Technique [] has demonstrated contrast enhancement of greater than three times on [] step wedges. This technique has produced an improvement in resolution from 90 to 130 lines/mm. [] will demonstrate this technique in NPIC during the second week of June.

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2. Scan & Search PI Station [] Installation and pre-acceptance tests were completed on 4 May. The instrument was turned over to TSG/ESD on 6 May for technical test and evaluation.

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3. [] - Technical requirements for the new procurement of [] light tables have been completed. These requirements have been distributed throughout the intelligence community and negotiations for the next purchase will take place in mid-June.

4. Automatic Focus Control Breadboard [] Tests results on this project are excellent. The breadboard demonstrations indicate that a focusing sensitivity of less than a micrometer can be achieved. A PAR for Phase 2 of this program has been submitted for approval.

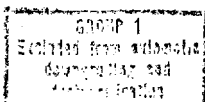
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5. Roomlight Enlarger/Printer [] has developed a new heat processing unit. They requested that our Roomlight Enlarger/Printer be returned to them so that a new processing unit can be installed--without cost to the Government. [] has also asked whether NPIC would accept the current enlarging paper being replaced by a plastic base material.

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Declass Review by NIMA/DOD

NRO review(s) completed.

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6. DIA [] is working toward a solution of the problems in the DIA version of the [] light tables. Pre-acceptance testing of the fixes is expected to occur late in June.

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7. Zoom 240 Improvements - [] has delivered two new items for use on the [] micro-stereoscope. The Interpupillary and Image Rotation locks are being evaluated while the Eyeshades Prototype will be evaluated early in June.

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8. Image Comparison Microstereoscope - [] briefed the EXRAND Procurement Coordinating Team on this instrument. During the period 22 to 25 May, the ICM was demonstrated to representatives from the intelligence community.

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9. [] Automated Stereo Scanner - The test materials developed under the recently closed-out Auto. Stereo Scanning program were evaluated in terms of their applicability to several Imagery Interpretation Research Program endeavors. They were deemed suitable for use in the Search Improvement Program and will be employed as appropriate.

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10. TSG/APSD - Dupe Stock Evaluation [] personnel reviewed the test procedures (proposed by a [] contractor) to be used in an upcoming dupe stock evaluation. This project is being monitored by TSG/APSD. A recommendation was made to consider "multifactor psychophysical techniques" in lieu of those proposed by the contractor and a consultant was suggested to TSG/APSD for this effort.

11. Image Comparison Microstereoscope [] Center optics consultant [] personnel participated in a program to assist TSG/ESD in its evaluation of the effects upon operator performance of optical misalignment of the Image Comparison Microstereoscope optical train.

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Additional testing and theoretical work is planned, with the aim of developing superior performance specifications for the follow-on contract.

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12. [] Search and Scan PI Station - During the week of 22 May [] conducted a human factors evaluation of the Scan and Search PI Station. The final report on this evaluation will be completed in June.

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13. Proposed Color Training Course [] personnel assisted the Research Branch, TSG/RED, in developing an introductory color training course for Center technical personnel.

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14. [] IEG has been assigned as the official DIM interface with TSG. He has been fully briefed on the TSG/RED/RB [] Program.

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15. The [] Computer which had been GFE'd [] has been received in TSG/RED/RB for use in the [] laboratory. It was inoperative at the time of shipment and TSG/ESD/EPB personnel are repairing it.

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16. [] Photoscience Support: Five proposals have been received. Four pertain to work orders under the FY-72 program, and one pertains to continuation of the contract for FY-73. Three of the four work order proposals were authorized for contract effort: "Contrast Manipulation Via Noble-Metal Salts", "Optimization of Interference Contrast Microscopy", and "Viscous Developer Assessment". The fourth, "Preliminary Analysis of [] Operational Waste Waters", is being held for clarification of the user's (Logistics Branch) requirements. The FY-73 item is under evaluation.

17. National Bureau of Standards - Scanning Electron Microscopy (SEM): The Phase I familiarization effort was begun by NBS using Center-supplied imagery to identify SEM sample preparation and viewing parameters. This phase is scheduled for

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completion by 30 June when a proposal for Phase II will be submitted. This latter phase will address specific imagery-related problems.

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18. [redacted] Color Technology Support: A
meeting was held [redacted]

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18 May 1972 [redacted] management has discontinued development of their high resolution microfilm type color reproduction material until they can determine if a market exists. We indicated that we felt that the new material had great promise and if they were able to make it competitive with our presently used material, they would find a good market for it. As a result of this meeting, they agree to supply us with 1000' of 70 mm test material; this is sufficient for us to perform both sensito-metric and operational evaluations.

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19 [redacted] Color Equipment Investigation Program:
The Color Control Cell task was finished by receipt of the final report and by inspection of the room [redacted]
[redacted] The Color Cell Report was reprinted at the Center and will be widely distributed in the community.

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21. Film Can Label Removal - A new method for removing classified labels from film cans and spools, which allows the can to be recycled, has been developed by TSG/RED/RB. At present, labels are ground off with a power wire brush, a dusty, noisy operation which must be done at night on overtime. The new method involves placing a small amount of Stoddard Solvent on the label--after soaking for five to ten minutes, the label may be peeled off.

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22. Samples of [] viscous processed film were measured on the Color Eye Colorimeter in support of a TSG/APSD study. The special transmittance data shows a very apparent reddish color, indicating that contrast may be enhanced through the use of appropriate filters.

23. The Color Control Cell has been placed in operation. Activities this month were:

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(a) Color Eye Measurements of Repro Shop and [] samples.

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(b) Viewing of [] Chips for Insite Analysis.

(c) Color vision testing of TSG/APSD personnel, and Color Exploitation Working Group personnel.

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Meetings, Briefings, etc.

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1. One 3-4 May briefings on the results of two contractual studies were presented to Center personnel. These were "Image Quality of CRT Displays" [] and "Storage & Retrieval of Digitized Imagery" []

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2. On 3 May [] OMS consultant ophthalmologist, for technical discussions of the Center's Contact Lens and Impact-Resistant Lens evaluation programs. A follow-up meeting was held with Chief, TSG, on 18 May to discuss the future course of these programs.

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3. On 9 May [redacted] briefed the Color Exploitation Working Group on color vision and interpretation of color photography. Excerpts from this briefing were provided to

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[redacted] TSG/APSD, who is evaluating visual performance under narrow band (green) illumination.

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4. On 10 May, the Autocord Measuring Device was demonstrated [redacted]

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5. On 18 May [redacted]

[redacted] met for the first of a series of meetings to develop a plan by which EXRAND would distribute human factors literature to appropriate personnel throughout the reconnaissance community.

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6. On 23 May [redacted] TSG/RED optics consultant, met with [redacted] personnel to plan a research program to test visual resolving power as a function of very small pupil sizes [redacted] will conduct this research under his current consultation contract to NPIC [redacted] also addressed research needs associated with the human factors evaluation of the Image Comparison Microscopes.

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7. The following personnel were briefed on the Color Control Cell:

(a) Ch/TSG, Ch/TSG/RED, Ch/TSG/APSD,
DCh/TSG/RED, DCh/TSG/APSD.

(b) Team members of the Color Exploitation Working Group.

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(d)

[redacted] IG Team.

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X Training:

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X Proposals Approved and Received:

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1. Film Tension Measuring Device

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2. Semi-Automated Pointing

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3. Precise Measurement Study

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4. A work order type proposal was received covering preparation of a special emulsion for image enhancement.

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5. A proposal to conduct an analytical study on film grain noise filtering was received

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6. A proposal to review and evaluate Hadamard transform research in image processing was received

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7. A proposal for engineering consultation, design, and fabrication services for FY-73 was received

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8. [redacted] discuss a verbal proposal to process digitized, classified imagery to perform evaluation, diagnostics, and enhancement. They wanted NPIC to process full clearances for a few of their scientists and for their laboratory so they could "work" on the digital data at no cost to NPIC.

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9. New contracts in TSG/RED/SAB:

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(a) [redacted] Ground Coverage Display

(b) [redacted] Ground Coverage Display

(c) [redacted] Digital Mensuration

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X Personnel:

[redacted]

X Significant Items of Interest for June 1972:

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The reorganization and modification of the Digital Image Manipulation laboratory is scheduled to begin 15 June. Hardware modifications will take from six-eight weeks. Software modifications scheduled for the next three months, will be performed by [redacted] PSG/AID.

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[redacted]
Deputy Chief
Research & Engineering Division
NPIC/TSG

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